

Amendments to the Claims

The following Listing of Claims replaces all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-10 (canceled)

Claim 11 (currently amended): A machine-implemented method for enabling comparison between scaling attributes and receiving attributes at a receiving destination, comprising:

receiving a scalable encoded bitstream comprising scalable encoded media data and values of non-media-type-specific scalability attributes corresponding to different adaptation points of the scalable encoded media data;

specifying selecting an adaptation point for the scalable encoded bitstream without regard to the scalable encoded media data, wherein the selecting comprises comparing adaptation measures computed from ones of the scalability attribute values to receiving attributes specifying constraints based on the adaptation measures for a destination of the scalable encoded bitstream of the attributes; and

transcoding the scalable bit stream in accordance with the selected adaptation point to produce a scaled version of the scalable encoded bitstream imposing constraints on the measures of the attributes.

Claim 12 (currently amended): The method of claim 911, wherein the selecting comprises determining at least one of the adaptation measures of the attributes comprise based at least in part on a multivariate function comprising a linear combination of products of univariate functions of ones of the scalability attribute values.

Claim 13 (currently amended): The method of claim 11, wherein the selecting comprises comparing the at least one adaptation measure to measures of the attributes further comprise at least one constraint on the definable multivariate functions function.

Claim 14 (currently amended): The method of claim 11, wherein the selecting comprises comparing ones of the adaptation measures to ones of the receiving attributes specified comprises specifying limit constraints applicable to functions of said receiving attributes.

Claim 15 (currently amended): The method of claim 11, wherein the selecting comprises comparing ones of the adaptation measures to ones of the receiving attributes specified comprises specifying optimization constraints applicable to functions of said receiving attributes.

Claim 16 (currently amended): The method of claim 13, wherein the products comprise product terms, and wherein the selecting comprises evaluating the definable multivariate functions function based on ones of the receiving attributes specifying at least one of comprise at least one from a group comprising:

a number of product terms in the linear combination;
a number of elements in each product term;
attribute codes for attributes in each product term;
function codes for the univariate functions on of the attribute values; and
multipliers for at least one the linear combination.

Claim 17 (currently amended): The method of claim 14, wherein the selecting comprises comparing ones of the adaptation measures to ones of the limit constraints comprises specifying for at least one of one of the adaptation measures at least one of a maximum value and a minimum value supportable by the receiving destination from a group comprising:
maximum supportable values for the receiving destination for at least one measure; and
minimum supportable values for the receiving destination for at least one measure.

Claim 18 (currently amended): The method of claim 15, wherein the selecting comprises selecting the adaptation point in accordance with at least one of the optimization constraints comprise specifying at least one of a maximization and a minimization of a respective one of the adaptation measures from a group comprising:

minimization of attribute measures; and
maximization of attribute measures.

Claim 19 (currently amended): The method of claim 11, wherein the selecting comprises determining at least one of the adaptation measures based at least in part on an evaluation of a measures of the attributes comprise stack functions function comprising operators, and variables corresponding to ones of the scalability attributes.

Claims 20-32 (canceled)

Claim 33 (currently amended): A transcoder ~~for comparing between scaling attributes and receiving attributes~~, comprising:

an input that receives a scalable encoded bitstream comprising scalable encoded media data and a resource description comprising values of non-media-type-specific scalability attributes corresponding to different adaptation points of the scalable encoded media data,
wherein the input additionally receives receiving attributes specifying for a destination of the scalable encoded bitstream constraints on adaptation measures specified in terms of respective functions of ones of the scalability attributes;

an optimizer that selects an adaptation point for the scalable encoded bitstream without regard to the scalable encoded media data, wherein in selecting the adaptation point the optimizer compares values of the adaptation measures computed from ones of the scalability attribute values to ones of the constraints specified by the receiving attributes~~a specification apparatus for specifying receiving attributes based on measures of the attributes; and~~

~~a constraint imposing apparatus for imposing constraints on the measures of the attributes~~a resource adaptation engine that encodes the scalable bit stream in accordance with the selected adaptation point to produce a scaled version of the scalable encoded bitstream.

Claim 34 (currently amended): A computer system for applying receiving attributes, comprising:

a memory; and

a transcoder that performs operations comprising

receiving a scalable encoded bitstream comprising scalable encoded media data and values of non-media-type-specific scalability attributes corresponding to different adaptation points of the scalable encoded media data,
selecting an adaptation point for the scalable encoded bitstream without regard to the scalable encoded media data, wherein the selecting comprises comparing adaptation measures computed from ones of the scalability attribute values to receiving attributes specifying constraints on the adaptation measures for a destination of the scalable encoded bitstream,
and for comparing between scaling attributes and receiving attributes,
comprising:

~~a specification apparatus for specifying receiving attributes based on measures of the attributes; and~~

transcoding the scalable bit stream in accordance with the selected adaptation point to produce a scaled version of the scalable encoded bitstream
~~a constraint imposing apparatus for imposing constraints on the measures of the attributes.~~

Claims 35 and 36 (canceled)

Claim 37 (new): The method of claim 11, wherein the scalable encoded bitstream additionally comprises description metadata specifying a hierarchical model of the bitstream, and the transcoding further comprises adapting the description metadata to represent the structure of the scaled version of the scalable encoded bitstream.

Claim 38 (new): The method of claim 11, wherein the scalable encoded bitstream specifies combination variables in terms of respective ordered lists of ones of numeric constants, variables, arguments, and operators; and further comprising evaluating each of the combination variables, wherein the evaluating comprising pushing the respective ordered list onto a respective expression stack.

Claim 39 (new): The method of claim 38, wherein
the pushing comprises pushing each constant into the respective expression stack, and
the pushing of each constant comprises pushing a real numeric element corresponding to the constant into the respective expression stack.

Claim 40 (new): The method of claim 38, wherein
the pushing comprises pushing each variable into the respective expression stack, and
the pushing of each variable comprises determining a numeric value of the variable for a set of adaptation points and pushing the determining numeric value into the respective expression stack.

Claim 41 (new): The method of claim 38, wherein
the pushing comprises pushing one or more unary operators into the respective expression stack, and

in response to pushing each unary operator into the respective expression stack, popping the unary operator and a successive top numeric stack element out of the respective expression stack, determining a result from the popped unary operator and numeric stack element, and pushing the result into the respective expression stack.

Claim 42 (new): The method of claim 38, wherein
the pushing comprises pushing one or more binary operators in the respective expression stack, and
in response to pushing each binary operator into the respective expression stack, popping the binary operator and two successive top numeric stack elements out of the respective

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expression stack, determining a result from the popped binary operator and the two numeric stack elements, and pushing the result into the respective expression stack.

Claim 43 (new): The method of claim 38, further comprising calling each of the combination variables specifying a number of arguments, and in response to each calling of a respective one of the combination variables, serially popping the specified number of top elements from the respective expression stack, and determining a value of the combination variable from the popped elements.